

Attorney Docket No.  
UBAT1340-1

Serial No. 09/964,270  
Customer ID: 25094

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**REMARKS**

Favorable reconsideration of this application is requested in view of the foregoing amendments and the following remarks. Claims 20-47 are pending in the application. Claims 39-47 are newly presented. Claims 1-19 are canceled without prejudice or disclaimer.

The claims are amended in order to more clearly define the invention, support for which is found in the figures and related parts of the specification. Support for the recitation of a vertically aligned carbon nanofiber (VACNF) is found through the specification as originally filed. At page 8, lines 20-25, the specification as originally filed states that the VACNFs can be nanoscale, needle-like carbon fibers with diameters of typically less than 30nm and lengths typically ranging from approximately .5 to approximately 10 microns. However, the diameters can be large if desired (e.g., up to approximately 300nm), and smaller (e.g., down to approximately 3nm, using post growth etching). the lengths can also be longer (e.g., to approximately 200 um) or shorter (e.g., 0.05um).

Claims 35-36 are rewritten in independent form and also specify the vertically aligned carbon nanofiber. Support for new claims 39-47 is found in original claims 28-30.

The title is amended to more concisely name the claimed invention. The abstract is amended to more accurately summarize the claimed invention.

At pages 2-3 of the Action, dated January 14, 2004, the Examiner discusses a restriction requirement. Applicant affirms the election of Group II, claims 18-38, with traverse. Claims 1-17 were withdrawn from consideration in the Action. The traversal is based on the fact that examination of all the claims would not be a burden on the Office despite their possible disparate classification(s). Nevertheless, as noted above, claims 1-17 have been cancelled without prejudice or disclaimer.

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At pages 3-4 of the Action, the Examiner objects to the drawings on the grounds that detail number 430 shown in FIG. 4 was previously not recited in the text of the specification. The Examiner's careful consideration of the drawings, as well as the specification, is very much appreciated. The third full paragraph of page 14 is now amended to recite tungsten interconnect 430, explicit support for which is found in FIG. 4 as filed. The basis for this objection having been obviated via the amendment to page 14 of the specification, no corrections to drawings are necessary. The third full paragraph of page 14 is also amended to correct a typographical error.

Accordingly, withdrawal of this objection is respectfully requested.

Claims 18-38 were rejected under 35 USC 102(b) as anticipated by Eldridge et al. (i.e., U.S. Pat. No. 6,110,823, hereinafter Eldridge). With regard to the claims are presently amended, the disclosure of the Eldridge reference is not sufficient to support this rejection.

Eldridge discloses a method of modifying the thickness of a plating on a member by creating a temperature gradient on the member, application for employing such a method, and structures resulting from such a method. As noted by the Examiner, the Eldridge reference does mention "carbon fibers" at column 121, at lines 55-56.

However, the Eldridge reference does not describe or teach carbon nanofibers. The presently claimed nanofiber distinction is important because the instant application solves the problem of connecting carbon nanofibers to an underlying structure. Further, at column 121, about lines 54-56, Eldridge also teaches that the wire 4102 is of any material suitable for being inserted into the mass 4114. The insertion teachings of Eldridge are completely unsuitable for use with the claimed carbon nanofibers. Even if Eldridge taught how to hold a nanofiber (which Eldridge does not teach), the modification of the insertion method of Eldridge to nanofibers would simply result in a broken nanofiber and no connection. In contrast to the insertion teaching

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of Eldridge, the claimed nanofibers can be grown in place as described in detail by the instant application.

Moreover, the Eldridge reference clearly does not describe or teach the vertically aligned aspect of the presently claimed vertically aligned carbon nanofiber (VACNF). The presently claimed vertically aligned carbon nanofibers are enabled by this application via the described plasma assisted chemical vapor deposition process. The presently claimed vertical alignment provides significant advantages that are explicitly described in this application as originally filed. Vertical alignment provides significant field emission (FE) device advantages. Vertical alignment provides significant chemical sensor advantages. Vertical alignment provides significant biological sensor advantages. Please see page 8, line 25 to page 9, line 8 of this application.

The presently claimed invention is not disclosed or suggested by Eldridge because the Eldridge reference does not describe or teach a vertically aligned carbon nanofiber. Eldridge simply does not disclose or suggest a carbon nanofiber, much less how to attach a carbon nanofiber so that it would be vertically aligned.

With regard to claims 28-30 and new claims 39-47, each of these dependent claims add specific passivator limitations that are not disclosed or suggested by the Eldridge reference with regard to nanofibers. Thus, these dependent claims are each considered to be separately patentable.

Accordingly, withdrawal of this rejection is respectfully requested.

Other than as explicitly set forth above, this reply does not include acquiescence to statements, assertions, assumptions, conclusions, or any combination thereof in the Office Action. In view of the above, all the claims are considered patentable and allowance of all the claims is respectfully requested. The Examiner is invited to telephone the undersigned (at direct line 512-457-7233) for prompt action in the event any issues remain.

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In accordance with 37 CFR 1.136(a) pertaining to patent application processing fees, Applicant requests an extension of time from April 14, 2004 to May 14, 2004 in which to respond to the Office Action dated January 14, 2004. A notification of extension of time is filed herewith.

The Director of the U.S. Patent and Trademark Office is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 50-0456 of Gray Cary Ware & Freidenrich, LLP.

Respectfully submitted,

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Dated: May 12, 2004

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